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Late Jurassic Sedimentation in the Boreal-Tethyan Seaway: climate modelling, geochemistry, and petrography of the Kimmeridge Clay Formation

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Appendix A - Climate modelling figures

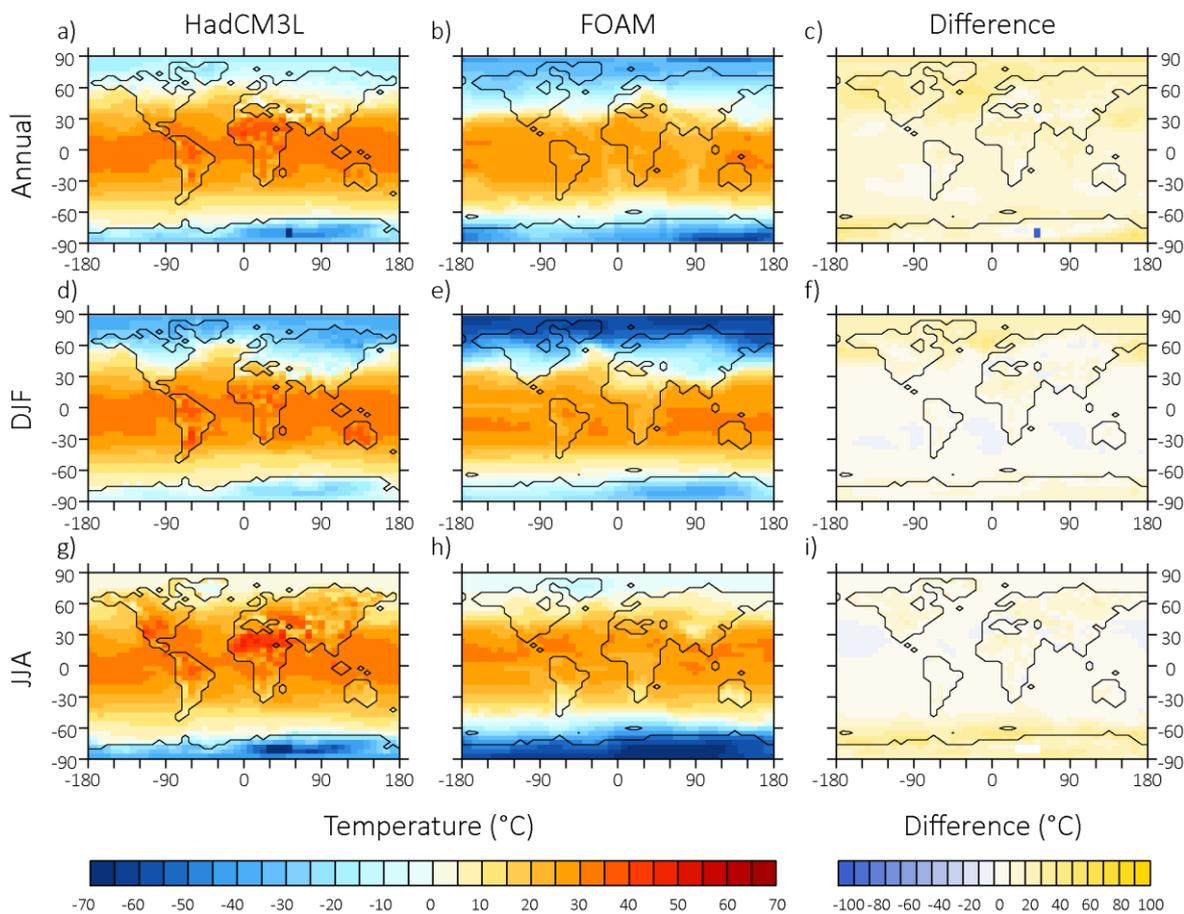


Figure 0.1. Preindustrial simulation surface temperature maps. (a, d, and g) Annual, winter (DJF), and summer (JJA) surface temperature maps from HadCM3L. (b, e, h) Annual, winter (DJF), and summer (JJA) surface temperature maps from FOAM. (c, f, and i) Annual, winter (DJF), and summer (JJA) temperature differences between HadCM3L and FOAM.

Appendix A

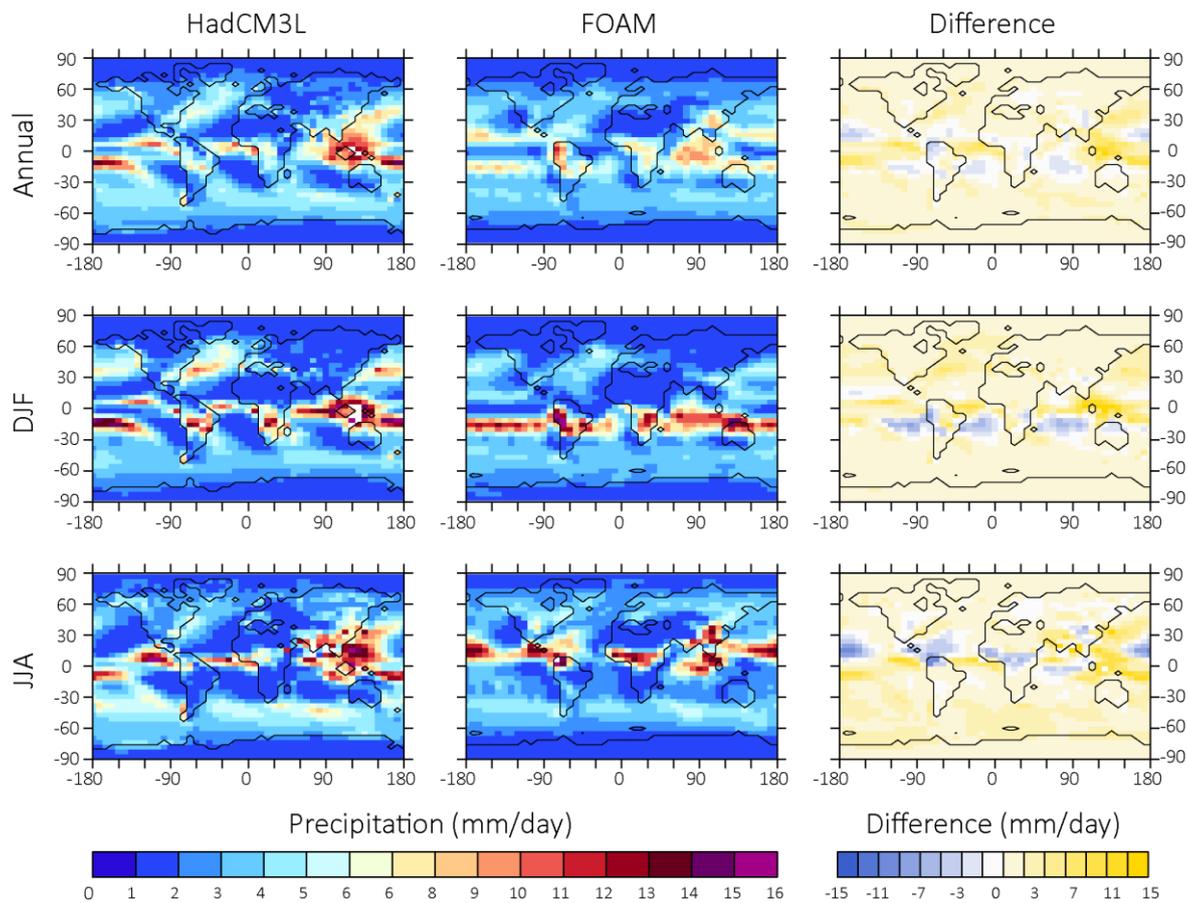


Figure 0.2. Preindustrial simulation precipitation maps. (a, d, and g) Annual, winter (DJF), and summer (JJA) precipitation from HadCM3L. (b, e, h) Annual, winter (DJF), and summer (JJA) precipitation from FOAM. (c, f, and i) Annual, winter (DJF), and summer (JJA) precipitation differences between HadCM3L and FOAM.

| Near Surface temperature (°C) | HadCM3L | FOAM | HadCM3L/FOAM Difference |
|-------------------------------|---------|------|-------------------------|
| Annual | 14.6 | 7.3 | 7.3 |
| DJF | 12.3 | 5.1 | 7.2 |
| JJA | 16.5 | 8.8 | 7.7 |

Table 0.1. Preindustrial annual, winter (DJF), and summer (JJA) global mean surface temperatures for the HadCM3L and FOAM and the difference between the two models.

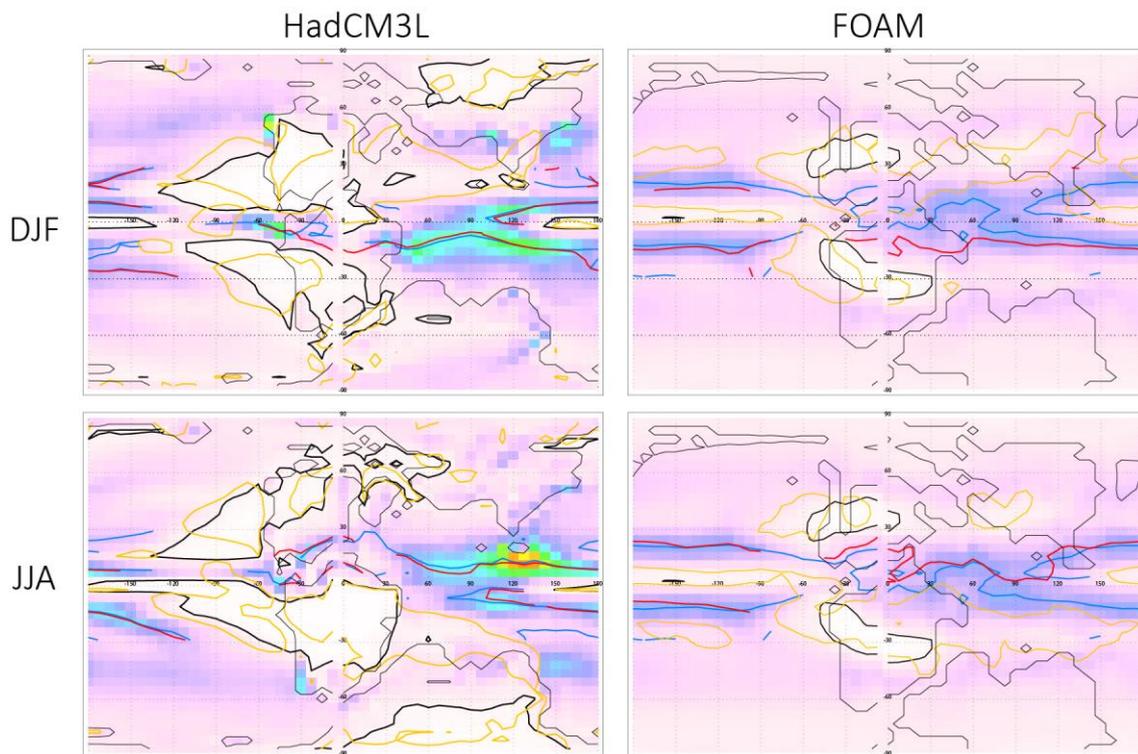


Figure 0.3. Boreal summer (JJA) and winter (DJF) mean precipitation (mm/s) from HadCM3L (left) and FOAM (right). Overlain, the red lines show the local maximum in vertical atmospheric ascent velocity (w) at a height of 500 mbar, for regions equator-wards of 30 degrees N/S, with 500 mbar temperature of greater than 260 K, and $w > 0.005$ m/s. The blue lines show the local maximum in precipitation (p), for regions equator-wards of 30 degrees N/S, with 500 mbar temperature of greater than 260K, and $p > 0.00003$ mm/s. Thick black line encompasses dry regions where the precipitation rate is less than $1 \cdot 10^{-5}$ mm/s. The orange line encompasses regions of mid-atmospheric descent where the vertical velocity at 500 mbar is towards the surface and greater than 0.02 is m/s. After Armstrong et al., (2016).